

## Innovative High Efficiency Filter for Mars Dust, Phase II

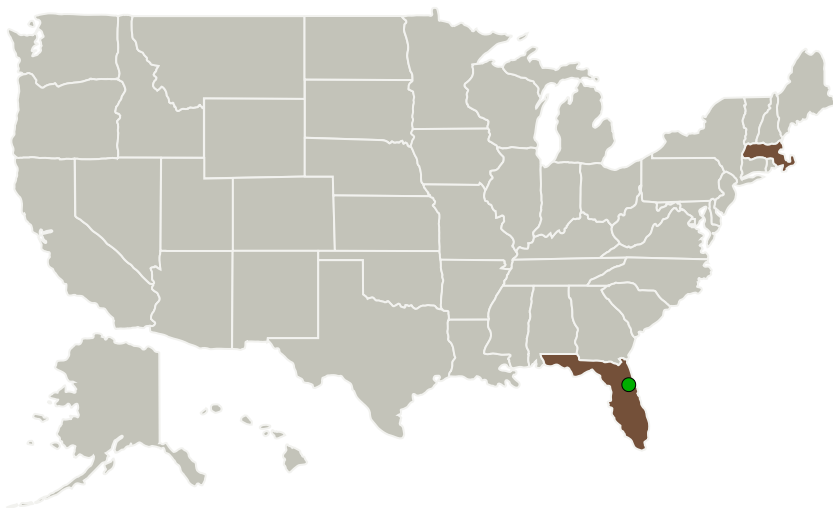
Completed Technology Project (2015 - 2017)




## Project Introduction

NASA is developing methods to collect and convert local resources such as Martian air (mainly carbon dioxide, CO<sub>2</sub>) into oxygen that can be used during the mission. The objective of this project is to protect such equipment from dust that may be sucked in with the CO<sub>2</sub>. We proposed an innovative dust filtration system that is ideally suited for long duration operation in Mars because it works well in a low pressure environment and it is essentially self-cleaning. The system is based on two mechanisms of dust filtration that have been tested separately and successfully In Phase I. In Phase II, parametric tests will be performed with simulated Mars dust and under simulated Mars environment to optimize each mechanism. Then the two mechanisms will be combined in a prototype and tested. The prototype will be delivered to NASA for potential future tests in the zero gravity airplane and in combination with the equipment to be protected.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Blazetech Corporation	Lead Organization	Industry	Woburn, Massachusetts
 Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida



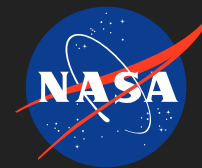
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## Primary U.S. Work Locations

Florida

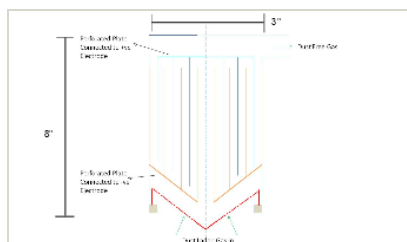
Massachusetts

## Project Transitions

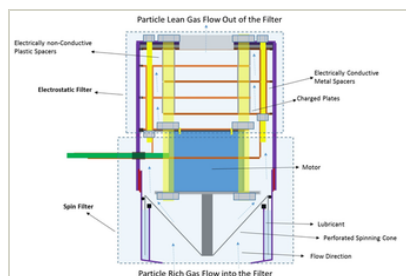
**May 2015:** Project Start**November 2017:** Closed out**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/137514>)

## Images

**Briefing Chart**

Innovative High Efficiency Filter for Mars Dust Briefing Chart  
(<https://techport.nasa.gov/image/134163>)

**Final Summary Chart Image**

Innovative High Efficiency Filter for Mars Dust, Phase II Project Image  
(<https://techport.nasa.gov/image/129519>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Blazetech Corporation

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Albert Moussa

**Co-Investigator:**

N. Albert Moussa

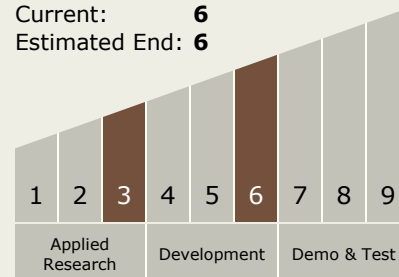
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### Technology Maturity (TRL)

Start: **3**  
Current: **6**  
Estimated End: **6**



### Technology Areas

#### Primary:

- TX07 Exploration Destination Systems
  - TX07.1 In-Situ Resource Utilization
    - TX07.1.2 Resource Acquisition, Isolation, and Preparation

### Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System